

SAN FRANCISCO BAY CONSERVATION AND DEVELOPMENT COMMISSION

50 California Street • Suite 2600 • San Francisco, California 94111 • (415) 352-3600 • Fax: (415) 352-3606 • www.bcdc.ca.gov

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Application Summary

(For Commission consideration on September 4, 2008)

Number: BCDC Consistency Determination No. CN 10-03,
Material Amendment No. Five
Date Filed: July 30, 2008
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Staff Assigned: Max Delaney (415-352-3668, maxd@bcdc.ca.gov)

Summary

Applicant: U.S. Fish and Wildlife Service (USFWS)

Location: In the Commission's Bay, and salt pond jurisdictions, at the 8,000-acre complex and known as the Alviso Complex, located in the City of Fremont, and the Cities of San Jose, Sunnyvale, and Mountain View, respectively, in Alameda County and Santa Clara County, and at the 1,600-acre pond complex of ponds known as the Ravenswood Complex (formerly known as the West Bay Ponds), located in the City of Menlo Park, San Mateo County (see Exhibit A).



Building San Francisco Bay Area

Project: The proposed project is Phase One of the South Bay Salt Ponds Restoration Project (SBSPR Project) to restore former salt ponds to a mosaic of tidal wetlands and managed ponds at the Alviso and Ravenswood salt pond complexes. The activities associated with Phase One include restoring tidal habitat, reconfiguring salt ponds (changing the size and shape of ponds) (see Exhibits B, C, D, and G), installing recreation/public access facilities (see Exhibits E, F H, I and J) and conducting on-going operations and maintenance of existing site features, such as levees and water management structures including tide gates and siphons. The tidal habitat proposed for restoration includes salt and brackish marsh, mudflats, subtidal flats and channels, marsh transitional habitat, salt pannes and ponds, and sloughs. Managed ponds would be designed and operated to allow multiple options for pond reconfiguration and water regime management to vary pond depths (to allow creation of vegetated ponds, salt flats, shallow ponded areas, and deep-water ponds) and salinities.

Phase One would include Ponds A6, A8 (and A5 and A7 since they are connected hydraulically), A16, and SF2, thereby restoring and reconfiguring approximately 330 acres of tidal habitat, 1,400 acres of reversible muted tidal marsh, and 479 acres of managed ponds (See Tables 1 and 2). This consistency determination is for Phase One only of the SBSPR Project. Restoration activities in future phases of the SBSPR Project will require additional amendments to the Commission authorization for this project.

Table 1. Acreage To Be Converted and Habitat Types Planned for Phase One (in acres)

Pond Complex	Pond	Planned Habitat Type	New Acreage	Anticipated Completion Date	Total Area
Alviso	Pond A6	Tidal	330	2010	1,972
	Pond A8	Reversible Muted Tidal	1,400	2009	
	Pond A16	Reconfigured Managed Ponds	242	2011-2012	
Ravenswood	Pond SF2	Reconfigured Managed Ponds	237	2010	237
Total Area					2,209

Table 2. Approximate Existing Habitat and Habitat Areas Resulting from Phase One Conversion and Restoration Activities (in acres)

Habitat Type	Pond Complex	Existing Habitat Area	Habitat Area (after Phase One and Initial Facilities)
Salt Ponds	Alviso	7,360	5,388
	Ravenswood	1,440	1,203
		Net Change:	-2209
Tidal Marsh Habitat	Alviso	1,230	1,560
	Ravenswood	50	50
		Net Change:	331
Reversible Muted Tidal Habitat	Alviso	0	1,400
	Ravenswood	0	0
		Net Change:	1400
Reconfigured Managed Ponds	Alviso	0	242
	Ravenswood	0	237
		Net Change:	479
Total Project Area		10,080	10,080

Issues

Raised: The staff believes that the application raises eight primary issues: (1) whether the project is consistent with the priority use designation for the site; (2) whether the project is consistent with the Commission's salt pond policies; (3) whether the project is consistent with the Commission's fill policies; (4) whether the project is consistent with the Commission's public access policies; (5) whether the project is consistent with the Commission's natural resource policies, including fish, other aquatic organisms and wildlife; tidal marshes and tidal flats; subtidal areas; and sediment dynamics and hydrology; (6) whether the project is consistent with the Commission's policies on water quality, including salinity, dissolved oxygen, and mercury contamination; (7) whether the project is consistent with the Commission's dredging policies; and (8) whether the project is consistent with the Commission's safety of fills policies, including as related to sea level rise.

Background

The project that is the subject of this consistency determination is the initial phase of the larger South Bay Salt Ponds Restoration Project (SBSPP Project) which will lead to the conversion of approximately 15,100 acres of former salt ponds to a mosaic of tidal and managed wetland habitats. In addition to the Alviso and Ravenswood complexes that are the subject of this consistency determination, both owned and managed by the USFWS, the 5,500-acre Eden

Landing complex in Alameda County is the third component of the SBSPR project. The restoration of the salt ponds at Eden Landing would be authorized separately under BCDC Permit No. 7-03. The main goals of the SBSPR Project are to: (a) restore and enhance native wildlife habitats and wetlands; (b) maintain or improve flood protection; and (c) provide wildlife-oriented public access and recreation.

Phase One activities are designed to test restoration techniques on a small scale, and, with adaptive management, design approaches that would allow for the successful restoration of the entire SBSPR Project site over time. Phase One of the restoration program would begin in 2008. The implementation of future restoration would largely be determined by funding availability, but it is anticipated that, at a minimum, the restoration of 6,800 acres would be initiated by 2018.

Historically, the area occupied by the former salt ponds was predominantly tidal marsh and tidal flats. Small salt production operations around the Bay began as early as 1850, and by 1936, the Leslie Salt Company had consolidated ownership and management of several operations, producing over 300,000 tons of salt annually at 12,000 acres of salt ponds. Cargill Salt Company acquired Leslie Salt Co., in 1978 and continued to produce salt. In 2000, Cargill proposed to sell a portion of their ponds, retaining their Newark ponds for salt production. In March 2003, the California Department of Fish and Game (DFG) and the USFWS acquired approximately 15,100 acres of the former salt ponds from Cargill, using state, federal, and private foundation funds. The DFG and USFWS, the California State Coastal Conservancy (CSCC), the Santa Clara Valley Water District (SCVWD), the Alameda County Flood Control District (ACFCD), the U.S. Army Corps of Engineers (Corps), and a local stakeholder forum are developing a long-term restoration, flood management, and public access plan for the SBSPR project. Because of the large scope of the proposed project, the project is being planned for construction in phases over a 50-year timeframe and will be implemented through specific adaptive management strategies. When completed, the SBSPR Project would restore almost all of the 15,100 acres of former commercial salt ponds to a mix of tidal wetlands, managed ponds, and associated habitats. The future ratio of tidal marsh to managed ponds would be between 50:50 and 90:10. These two end-points represent the two preferred alternatives (Alternatives B and C) identified in the Environmental Impact Statement/Report (EIS/R) for the SBSPR project. It is therefore anticipated that at the conclusion of the project, approximately 6,800 to 11,900 acres of the project area would be tidal habitat and 1,700 and 6,800 would be managed pond habitat. However, the ultimate ratio of tidal wetlands to managed ponds is uncertain and would be based on the percentage of managed ponds necessary to provide habitat for shorebirds and waterfowl, and whether managed ponds could be reconfigured to protect water quality.

On April 29, 2004, the Commission approved BCDC Consistency Determination No. 10-03, authorizing the USFWS to install 31 new water control structures (including intake structures, outlet structures, and additional pumps) in the 25 ponds at the Alviso Complex and in six ponds at the Ravenswood Complex to allow refuge managers to perform controlled release of pond water into the Bay and to circulate Bay water in the ponds to reduce pond salinity. The placement of the water control structures was called for in the Initial Stewardship Plan (ISP) to allow the former salt ponds to be reconnected to the Bay while preserving and maintaining their value as habitat during the period of preparing a long-term restoration plan to convert the salt ponds to managed wetland and tidal marsh habitat. The Commission's consistency determination also authorized the initial restoration of 479 acres of ponds in the far

southeast corner of the Bay (Ponds A19, A20, and A21) to full tidal action in March of 2006, ongoing maintenance activities in the ponds previously conducted by Cargill-such as repairing and using docks, placing rip-rap and material dredged from the ponds to protect levees, using and maintaining and replacing existing water control structures, and performing other activities necessary for pond operation. The subject consistency determination has previously been amended on four separate occasions to allow for the additional placement of fill and excavation work associated with the maintenance and preparation of the ponds for restoration.

Material Amendment No. Five to BCDC Consistency Determination No. CN 10-03 would authorize restoration work within the salt ponds at the 8,000-acre Alviso Complex and the 1,600-acre Ravenswood Complex. Once restored, the two complexes would be managed by the USFWS as part of the existing Don Edwards San Francisco Bay National Wildlife Refuge.

Project Description

Project

Details: The applicant, the U.S. Fish and Wildlife Service (USFWS), describes the project as follows:

In the Bay:

- a) Dredge approximately 49,134 cubic yards of material at an approximately 115,870-square-foot (2.66-acre) area of fringe tidal marsh to create pilot channels to connect salt ponds to the Bay.

In Salt Ponds:

a) Alviso Complex (Pond A6)

- 1) Excavate and dredge approximately 43,390 cubic yards of material to breach levees, create pilot channels, and lower internal levees to restore tidal action;
- 2) Place approximately 14,290 cubic yards of material at 1.86 acres to create pilot channels and construct ditch blocks; and
- 3) Place approximately 40,000 cubic yards of material at 27.65 acres to resurface levee roads.

b) Alviso Complex (Pond A8)

- 1) Excavate approximately 26,339 cubic yards of material to create a pilot channel, accommodate a water control structure, and obtain material to raise an access road and construct a donut berm;
- 2) Place approximately 17,285 cubic yards of material at 1.02 acres to construct ditch blocks and install outboard water control structures, including a 40-foot-wide, concrete-armored water control structure at the east side of Pond A8 to allow for two-way flow;
- 3) Place approximately 107,000 cubic yards of material at 66.78 acres to resurface levee roads;
- 4) Place approximately 1,210 cubic yards of rock protection at 0.04 acres at the interior of levees; and
- 5) Remove an existing pump station.

c) **Alviso Complex (Pond A16)**

- 1) Excavate and dredge approximately 145,482 cubic yards of material to breach levees and create pilot channels, and install water control structures;
- 2) Place approximately 450,000 cubic yards of material at 1.62 acres to fill borrow ditches;
- 3) Place approximately 50,562 cubic yards of material at 32.84 acres to construct low internal berms and nesting islands;
- 4) Place approximately 6,200 cubic yards of rock to protect the interior of salt pond levees at 0.21 acres;
- 5) Place approximately 73 cubic yards of fill at 1.79 acres to install a fish screen and three water control structures: at Coyote Creek, between Pond A16 and A17, and between Pond A16 and Artesian Slough;
- 6) Construct four, 4-foot-wide-by-2-foot-high internal weir structures (of various lengths) at each pond cell and two internal weirs at the outlet canal; and
- 7) Place approximately 39,000 cubic yards of material at 24.24 acres to resurface levee roads.

d) **Ravenswood Complex (Pond SF2)**

- 1) Dredge approximately 172,990 cubic yards of material to create pilot channels, and to construct berms to divide ponds into smaller cells to increase management possibilities and nesting islands;
 - 2) Place approximately 43,713 cubic yards of material at 21.11 acres to construct low internal berms and nesting islands;
 - 3) Place approximately 27,000 cubic yards of material dredged from pond or from lowering levees at 17 acres to resurface levee roads;
 - 4) Place approximately 6,920 cubic yards of material at 0.24 acres to install outboard water control structures between Pond SF2 and the Bay; and
 - 5) Construct seven, 4-foot-wide-by-2-foot-high internal weir structures (of various lengths).
- e) Place a total of approximately 3,730 square feet of pile-supported fill (at Ponds A16 and SF2) to construct three public access viewing platforms including seating, interpretive station, ramp, and restroom;
- f) Install a viewing area and interpretive station at Bayfront Park in the City of Menlo Park, San Mateo County, in partnership with the City of Menlo Park at one of the high points in the park;
- g) Install, use and maintain various public access amenities including interpretive stations at Ponds A16 and SF2, benches, trashcans, toilets at SF2, and interpretive signage;

- h) Upgrade, use and maintain approximately 1.25-mile of existing public access trails, including 0.75 miles of trail along the south side of Pond A16 and 0.50 miles of trail along the eastern and southern edges of Pond SF2; and
- i) Create, use and maintain approximately 2.75 miles of public access trails, including a 0.25-mile trail along the eastern and southern edges of Pond SF2 and a 2.5-mile year-round trail from the Sunnyvale Treatment Plant in the City of Sunnyvale, Santa Clara County, to Stevens Creek.

Fill: The proposed project would involve the placement of approximately 802,250 cubic yards of fill over approximately 8,559,771 square feet (196.5 acres) of the Commission's salt pond jurisdiction throughout the project area to restore tidal marsh and managed pond habitat and construct public access improvements. Most of the fill to be placed would be excavated and dredged from salt ponds and channels and used at the project site. Approximately 213,000 cubic yards of material would be placed upland to resurface levee roads and approximately 589,153 cubic yards of material would be used to create ditch blocks, water control structures, nesting islands, berms to reconfigure salt ponds, and raise or extend levees.

**Public
Access:**

Some public access is currently available at both the Ravenswood and Alviso salt pond complexes, including controlled waterfowl hunting. At the Ravenswood pond complex, existing public access includes a Bay Trail spine segment along the southern edge of the ponds west of the Dumbarton Bridge and continuing on to the Dumbarton Bridge, a loop trail around the northeasterly ponds, and a spur trail south of the Dumbarton Bridge and adjacent to the Bay. Access to the Ravenswood pond complex is available from an exit ramp off the Dumbarton Bridge. At the Alviso pond complex, existing access includes two loop trails, a loop connector trail, and Bay Trail spine segments. These trails can be variously accessed by the Refuge Environmental Education Center located near Highway 237 and Zanker Road in Alviso, the Alviso Marina County Park, Crittenden Lane, and Carl Lane (Sunnyvale Treatment Plant).

The public access proposed for these areas in Phase One includes expansion and enhancement of the existing trail system, several raised viewing platforms and interpretive stations, and public restrooms. No new parking is proposed for the project, as the project planning process determined that sufficient parking was already available at existing staging areas. Specific Phase One improvements would be:

1. **Alviso Pond Complex.** Proposed public access improvements in the Alviso pond complex would be located in two separate areas, one of which would be accessed from existing trails that connect to the existing FWS Environmental Education Center, and the other, a proposed Bay Trail spine would connect to existing Bay Trail spine segments, and would include:
 - a. An approximately 2.5 mile multiuse Bay Trail spine located north of Moffett Field, and connecting the City of Sunnyvale Treatment Plant staging area to the south side of Stevens Creek Levee connection to the Mountain View Bay Trail spine;

- b. A retrofitted 0.75 mile portion of the Pond A16 trail; and
 - c. One raised ADA-accessible viewing platform and one at-grade interpretive station along the pond A16 trail (see Exhibits E, F and J).
2. **Ravenswood Pond Complex.** Proposed public access improvements at the Ravenswood pond complex would occur at Pond SF2, and would be accessed from Highway 84 and served by existing parking areas, and would include:
- a. A rehabilitated trail on the east side of Pond SF2 to be ADA-accessible and multiuse;
 - b. At Pond SF2, an ADA-accessible entry control gate, trailhead with informational kiosk and bench seating, and ADA-accessible chemical toilets; and
 - c. Along the Pond SF2 trail, two ADA-accessible raised viewing platforms with interpretive stations (see Exhibits H and I).

The proposed work would upgrade and/or create approximately 4,934,708 square feet of public access and would include approximately 2.75 miles of new trails in the Alviso complex and as part of the Bay Trail connection. Existing trails at Ponds A16 and SF2, would also be upgraded to be ADA-accessible. Approximately 4,587 square feet of the project area would be covered by new structures, which includes an 860-square-foot trailhead platform and restroom facility, two raised viewing platforms, and interpretive stations. The first viewing platform would be a 1,157 square-foot raised structure at Pond A16, which would include seating, interpretative station and a ramp. One of the viewing platforms at Pond SF2 would be a 1,425 square-foot platform, also raised on piers like the one at Pond A16, and would include a ramp, interpretative station, and bench. The other Pond SF2 viewing platform would be 1,146 square-feet and would include seating and interpretative stations. In addition, the SBSPR Project managers plan to work with the City of Menlo Park to construct an additional viewing area at high point in Bayfront Park overlooking Pond R4 and Greco Island. Because of the nearby parking mentioned above, which the applicant considers adequate to support anticipated usage of the new public access, no parking is specifically planned for Phase One of this project.

**Priority
Use:**

The proposed project is located in areas designated as Wildlife Refuge priority use areas on *San Francisco Bay Plan* Map No. Seven.

**Schedule
and Cost:**

The USFWS proposes to begin Phase One in Fall 2008 and complete Phase One at the end of 2010. Following the completion of Phase One, the project would continue over a 50-year period and would involve adaptive management measures to assess the project success and to refine habitat restoration and management strategies. Future phases would include monitoring, levee rehabilitation and construction, additional public access trails and facilities, marsh and managed pond restoration work, and maintenance activities. The USFWS

estimates that the total project cost for Phase One (for both USFWS and DFG's sites) would be over \$10,000,000.

Staff Analysis

A. **Issues Raised:** The staff believes that the application raises eight primary issues: (1) whether the project is consistent with the priority use designation for the site; (2) whether the project is consistent with the Commission's salt pond policies; (3) whether the project is consistent with the Commission's fill policies; (4) whether the project is consistent with the Commission's public access policies; (5) whether the project is consistent with the Commission's natural resource policies, including fish, other aquatic organisms and wildlife; tidal marshes and tidal flats; subtidal areas; and sediment dynamics and hydrology; (6) whether the project is consistent with the Commission's policies on water quality, including salinity, dissolved oxygen, and mercury contamination; (7) whether the project is consistent with the Commission's dredging policies; and (8) whether the proposed project is consistent with the Commission's sea level rise and safety of fills policies.

1. **Priority Use Designation.** The proposed project would be located in areas that are designated as Wildlife Refuge priority use areas on *San Francisco Bay Plan* (Bay Plan) Map No. Seven. The project is designed to convert salt ponds to approximately 330 acres of tidal habitat, 1,400 acres of reversible muted tidal marsh, and 479 acres of reconfigured managed ponds. Upon completion, the project area would be included within the Don Edwards San Francisco Bay National Wildlife Refuge and actively managed by the U.S. Fish and Wildlife Service. The Commission should determine whether the project would be consistent with the priority use designation for the site.
2. **Salt Ponds.** The Bay Plan policies on salt ponds state, in part, that "[i]f the owner of any salt ponds withdraws any of the ponds from their present uses, the public should make every effort to buy these lands and restore, enhance or convert these areas to subtidal or wetland habitat. This type of purchase should have a high priority for any public funds available, because opening ponds to the Bay represents a substantial opportunity to enlarge the Bay and restoring, enhancing or converting ponds can benefit fish, other aquatic organisms and wildlife, and can increase public access to the Bay."

In March 2003, the State of California and the United States of America acquired 16,500 acres of commercial salt ponds in San Francisco Bay from Cargill, Inc. The purpose of the acquisition was to protect, restore and enhance the property for fish and wildlife, and to provide opportunities for wildlife-oriented recreation and education. Phase One of the proposed project would include restoration and management of a range of habitat types, including tidal habitat, muted tidal habitat, and reconfigured managed ponds.

The Bay Plan policies on salt ponds also state, in part, that "[a]ny project for the restoration, enhancement or conversion of salt ponds to subtidal or wetland habitat should include clear and specific long-term and short-term biological and physical goals, success criteria, a monitoring program, and provisions for long-term maintenance and management needs. Design and evaluation of the project should include an analysis of: (a) the anticipated habitat type that would result from pond conver-

sion or restoration, and the predicted effects on the diversity, abundance and distribution of fish, other aquatic organisms and wildlife; (b) potential fill activities, including the use of fill material such as sediments dredged from the Bay and rock, to assist restoration objectives; (c) flood management measures; (d) mosquito management measures; (e) measures to control non-native species; (f) the protection of the services provided by existing public facilities and utilities such as power lines and rail lines, (g) siting, design and management of public access and recreational opportunities while avoiding significant adverse effects on wildlife; and (h) water quality protection measures that include management of highly saline discharges into the Bay; monitoring and management of mercury methylation and sediments with contaminants; managing the release of copper and nickel to the Bay; and the minimization of sustained low dissolved oxygen levels in managed ponds.”

The overall goal of the 50-year SBSPR Project is to restore and enhance a mix of wetland habitats, provide wildlife-oriented public access and recreation, and provide for flood management. The specific goals of the proposed Phase One actions are to restore a mosaic of habitats, including tidal marsh, mudflat, salt panne and open water habitats (managed ponds), to support populations of fish and wildlife, special status species, migratory waterfowl, shorebirds, and anadromous and resident fishes.

Phase One activities are designed to test restoration techniques on a small scale, and, with adaptive management, design approaches that would allow for the successful restoration of the entire SBSPR Project site over time. The SBSPR Project will result of a mix of restored tidal and managed pond habitat. The final combination of how much of each type of habitat would be determined through an adaptive management process allowing for lessons learned from earlier phases to be incorporated into subsequent phases. Each phase of the project would have a separate monitoring plan with common elements and adaptive strategies as more data are gathered. The consistency determination states that “this approach to phased tidal restoration acknowledges that uncertainties exist and provides a framework for adjusting management decisions, as the cause-and-effect linkages between management actions and the physical and biological response of the system are more fully understood.”

The project sponsors drafted an “Adaptive Management Plan” that identifies management triggers to determine when restoration activities are not performing as expected. These triggers are intended to assist decision makers before a significant impact occurs. If a management trigger is tripped, further restoration would not occur until a focused evaluation is conducted to assess if a potentially significant impact would result. If the evaluation determines a significant impact would result, adaptive management action to avoid the impact would be implemented, and ongoing monitoring would determine the effectiveness of that action. The Adaptive Management Summary Table provided by the project sponsors includes, for each monitoring activity, restoration targets, expected time frames for decision-making, management triggers, and resulting potential management actions.

Pond A6 would be restored to tidal action. At Pond A6 monitoring would include evaluating water quality specifically related to mercury, tidal marsh habitat evolution (vegetation and channel mapping), invasive *Spartina* and other invasive plants,

fish, and endangered species (California clapper rail and salt marsh harvest mouse).

Ponds A5, A7, A8, and A8S would be restored to muted tidal habitat. At these ponds, monitoring would cover water quality (including salinity pH, temperature, dissolved oxygen, and mercury), mercury in sediment, mercury in sentinel species (monitoring of mercury bioavailability and mercury uptake in sentinel species as a special study associated with Pond A8), tidal marsh habitat evolution (vegetation and channel mapping), and invasive *Spartina* and other invasive plants.

Ponds A16 and SF2 would be reconfigured as managed ponds. At Ponds A16 and SF2, monitoring would include evaluating water quality (including salinity pH, temperature, dissolved oxygen), tidal marsh habitat evolution (vegetation and channel mapping), invasive *Spartina* and other invasive plants, and endangered species (California least tern and Western snowy plover).

The only action associated with the proposed project that could possibly pose a flood risk would be the Pond A8 restoration to muted tidal habitat. Monitoring is proposed to track downstream tidal scour to ensure that no other levees would be undermined. If a problem arises with levee integrity anywhere along Alviso Slough, the pond would be closed to tidal action. The consistency determination states that all other proposed project activities would either improve flooding risk or maintain the status quo.

An increase in vegetated wetlands would potentially increase mosquito populations if the areas do not drain properly. The EIS/R states that the potential increase in mosquito populations as a result of the proposed project would be less than significant, as well-drained tidal marshes typically do not provide high-quality habitat for mosquitoes. In addition, the project sponsors worked closely with the local Mosquito Abatement Districts in preparing the restoration plan.

Several ponds in the Alviso Complex contain existing public utilities infrastructure. In Pond A6, the proposed project would include construction of four new sections of boardwalk to allow access to PG&E's electrical transmission towers. The consistency determination states that the proposed project is not expected to affect PG&E's access to existing PG&E power towers in Pond SF2 because the project would include maintaining the areas with the towers and boardwalk as seasonal wetland. A section of the existing PG&E boardwalk, approximately 35 feet in length, will be modified to construct the seasonal wetland ditch and allow access over the ditch.

A description of the public access proposed as part of the project and potential effects on wildlife is discussed under the public access section. Potential fill activities proposed as part of the project are discussed under the fill section.

The Commission should determine whether the proposed project would be consistent with its policies on salt ponds.

3. **Fill.** The project would result in fill within the Commission's salt pond jurisdiction. The Commission may allow fill only when it meets certain fill requirements identified in Section 66605 of the McAtteer-Petris Act, which states, in part, that: (1) "the water area authorized to be filled should be the minimum necessary to achieve the purpose of the fill"; (2) "the nature, location, and extent of any fill should be such

that it will minimize harmful effects to the Bay area, such as, the reduction or impairment of the volume surface area or circulation of water, water quality, fertility of marshes or fish or wildlife resources, or other conditions impacting the environment..."; (3) "public health, safety, and welfare require that fill be constructed in accordance with sound safety standards which will afford reasonable protection to persons and property against the hazards of unstable geologic or soil conditions or of flood or storm waters"; and (4) "fill should be authorized when the applicant has such valid title to the properties in question that he or she may fill them in the manner and for the uses to be approved." Further, the Bay Plan Tidal Marshes and Tidal Flats policies state in part that "a minor amount of fill may be authorized to enhance or restore fish, other aquatic organisms or wildlife habitat if the Commission finds that no other method of enhancement or restoration except filling is feasible."

- a. **Minimum Amount Necessary.** The consistency determination for the project states that the placement of approximately 802,103 cubic yards of material at the Alviso and Ravenswood complexes would be the minimum amount necessary to meet the goals of restoring the site to fully functioning tidal marsh and creating managed pond habitat. The consistency determination states that "[t]he fill is necessary to create habitat (i.e., nesting islands) while maintaining the structural integrity of several existing levees, and to construct features such as starter channels and berms, ditch blocks, etc. to produce the appropriate hydrologic conditions conducive to tidal marsh formation. The majority of fill would be generated from on-site activities such as levee lowering, thus, not imported from off-site. This material will simply be redistributed within the restoration project area for maintenance and restoration improvements." A small amount of additional fill would be placed to provide shoreline protection (approximately 7,410 cubic yards) and for public access (approximately 4,587 square feet of pile-supported, floating, and/or solid fill).

It should also be noted that given the large scale of the SBSPR Project, funding sources are uncertain and limited. A large portion of the project cost for Phase One is slated for water control structures and equipment which limits the amount of funding remaining for the placement of fill.

- b. **Effects on Bay Resources.** The fill for ponds A16 and SF2 would be used to reconfigure existing salt ponds by reshaping levees and constructing berms and to create viable bird habitat by building nesting islands. The consistency determination states that, "Ponds A16 and SF2 will be reconfigured to create islands for nesting birds and shallow water habitat for shorebird foraging. It is important to note that these ponds have been designed as an experiment to create a high density of bird nesting islands interspersed with shallow water foraging habitat that has not been created previously in San Francisco Bay. The design attempts to optimize the balance of the constraints and considerations above based on what is known at this time." The restoration actions undertaken in Phase One (as well as in the overall SBSPR Project) would be evaluated for impacts and beneficial outcomes using adaptive management techniques. An Adaptive Management Plan has been prepared by the SBSPR Project Science Team that provides project objectives and "an approach to achieving [them]

through learning from restoration and management actions.” Given that there are some key uncertainties regarding the habitat designs in Phase One that would be favored by different bird and wildlife species and how the entire ecosystem would respond to restoration activities, the SBSPR Project would use monitoring, applied studies, and modeling to refine the design approach and plan future phases accordingly.

The consistency determination states that “[a]ny impacts (e.g., fill placement to create nesting islands) are done to create or enhance habitat for wildlife, including listed species, and to optimize restoration activities; environmental benefits will result from implementation of restoration.”

In addition to Section 66605 of the McAteer-Petris Act regarding effects of fill on water volume and circulation, the Bay Plan policies on water surface area and volume state that, “[w]ater circulation in the Bay should be maintained, and improved as much as possible. Any proposed fills, dikes or piers should be thoroughly evaluated to determine their effects on water circulation and then modified as necessary to improve circulation or at least to minimize any harmful effects.”

The consistency determination states that “[r]eestablishing tidal connectivity initially would increase the average discharge in tidal channels, increasing the potential for erosion of levees as a result of tidal currents and seepage-related failures. Consequently, there would be an initial increase in the risk of property loss (levee failure) during Phase 1 actions. As part of the project, a monitoring and adaptive management plan will be implemented to monitor the expansion of the slough channels to accommodate the additional tidal prism and to ensure that the expansion does not threaten the adjacent levee systems. If channel expansion threatens adjacent levees, project managers will identify measures to protect the levee in question, if needed, including potentially closing the breach. These measures may include additional levee breaches, altering the phasing of pond levee breaching, or requiring levee repairs or revetment.”

The consistency determination states that “the project would also result in beneficial impacts on flooding. Specifically, the existing levee system would be repaired, if needed, should an emergency occur or for reducing the risk of failure. To prevent channel erosion and potential damage to adjacent levee systems, although not anticipated, the project sponsors will repair unintended levee breaches that are not consistent with the restoration option selected. Tidal channels on and adjacent to restored marshlands would be larger after restoration, than under existing conditions, as a result of natural channel erosion. Consequently, the flood conveyance capacity of major tidal channels would be increased, lowering flood risk on nearby parcels.”

To address these potential impacts the consistency determination states “[w]hile we do not anticipate these impacts, any negative outcome of the project would be reversible under the adaptive management techniques prescribed for the project. Studies proposed under Phase 1, under adaptive management, will guide future work within the SBSPR Project area (i.e., all remaining ponds included in the Project will be addressed at later dates under separate permit

applications). It is important to note, therefore, that all Phase 1 improvements are reversible and no proposed actions irretrievably set the course of future restoration actions. All of these actions can be revisited or revised in the future.”

- c. **Public Health/Benefit.** The consistency determination states that “[t]he majority of the fill will be used to create wildlife habitat, including special-status species (i.e., nesting islands). Secondly, fill will also be used to create hydrologic conditions conducive to tidal marsh restoration, including ditch blocks, levee breaches, pilot channels, and levee lowering associated with restored ponds.”

There is the potential for coastal flooding to occur if existing levees fracture or fail. The USFWS plans to conduct ongoing maintenance on levees to prevent levee failure. In addition, the Army Corps of Engineers is conducting the South San Francisco Bay Shoreline Study, a Congressionally-authorized study to identify and recommend for Federal funding one or more projects for flood damage reduction, ecosystem restoration and related purposes such as public access in the entire SBSPR Project area. The consistency determination states that “...it is important to note that the Phase One actions were chosen because they do not, in and of themselves, require the implementation of flood control measures and they are an integral step from which much is expected to be learned and applied toward the successful implementation of planned future phases of the Project.” In other words, the ponds chosen for restoration, were sited in areas where altering hydrology and reestablishing tidal action would not be expected to affect any of the levees that are currently providing flood protection to populated, urbanized areas near the project site.

The consistency determination states that “[l]evees could potentially fail due to seismic ground shaking. However, repairs and upgrades to existing levees for the proposed trail system and water conveyance/control structures associated with the ponds, as well as regular maintenance, would be performed as part of the project. New water control structures would be engineered to withstand seismic events to the extent practicable, and these structures would not be located in an area that would result in the increased exposure of people to adverse effects.”

- d. **Valid Title.** The USFWS acquired the approximately 10,000 acres of former salt ponds in The Ravenswood and Alviso complexes in March 2003 from Cargill Salt Company using state, federal, and private foundation funds.

The Commission should determine whether the project is consistent with its law and policies regarding fill in the Bay/salt ponds.

4. **Public Access**

- a. **Maximum Feasible.** Section 66602 of the McAteer-Petris Act states that “...existing public access to the shoreline and waters of the...[Bay] is inadequate and that maximum feasible public access, consistent with a proposed project, should be provided.”

Public access to the shoreline and views to the Bay currently exist at the SBSPR Project area. Public access is available to the Alviso Ponds through the Don

Edwards National Wildlife Refuge with parking at its Environmental Education Center, the Alviso Marina County Park (immediately adjacent to the complex), Crittenden Lane, and Carl Lane (Sunnyvale Treatment Plant). In addition, public access is available to the Ravenswood Ponds at the parking area at the north and south side of the Dumbarton Bridge off-ramp (to Ravenswood trail at Pond SF2). Multiple users, including bicyclists, hikers on the Bay Trail, fishermen and duck hunters, access the region surrounding the project area.

Phase One of the SBSPR Project would increase public access by providing approximately four miles of new trails throughout the Alviso and Ravenswood complexes, a 2.5-mile year-round Bay Trail connection from Sunnyvale to Stevens Creek, a trailhead platform and restroom facilities at Pond SF2, two raised viewing platforms, interpretive stations, and other amenities. Existing trails at Ponds A16 and SF2, would be also be upgraded to provide ADA-accessible access. In addition, the SBSPR Project sponsors would work with the City of Menlo Park to construct an additional viewing area at a high point in Bayfront Park overlooking Pond R4 and Greco Island.

The EIS/R discusses the potential for some existing public access areas to be lost or removed as part of the overall SBSPR Project. The proposed Phase One activities, however, would not result in any loss of public access. Rather, it would provide a substantial increase in public access. In addition, the consistency determination states that “the EIS/R concluded that the maintenance and habitat restoration work proposed at the ponds would enhance habitat for a number of plant, fish, and wildlife species. Overall, these habitat quality increases would result in increases in recreational potential of the project site. The public is expected to be attracted to the site as species populations and composition increase. Specifically, recreational use of the site for bird watching, hunting and fishing is expected to increase. Thus, the restoration activities can be expected to enhance access and recreation at the site and make it a more desirable destination for hikers, boaters, bird watchers, anglers and possibly hunters.”

- b. **Wildlife and Human Interactions.** The Bay Plan policies on public access state in part, “[p]ublic access to some natural areas should be provided to permit study and enjoyment of these areas. However, some wildlife are sensitive to human intrusion. For this reason, projects in such areas should be carefully evaluated in consultation with appropriate agencies to determine the appropriate location and type of access to be provided.” The policies further state, “[p]ublic access should be sited, designed and managed to prevent significant adverse effects on wildlife...Siting, design and management strategies should be employed to avoid or minimize adverse effects on wildlife, informed by the advisory principles in the Public Access Design Guidelines....” The policies further state, “[p]ublic access should be integrated early in the planning and design of Bay habitat restoration projects to maximize public access opportunities and to avoid significant adverse effects on wildlife.” Finally, the policies state, “[t]he Commission should continue to support and encourage expansion of scientific information on the effects of public access on wildlife and the potential of siting, design and management to avoid or minimize impacts.”

In addition, the Bay Plan policies on salt ponds state, in part, that the restoration, enhancement or conversion of salt ponds to subtidal or wetland habitat, “[d]esign and evaluation of the project should include an analysis of...(g) siting, design and management of public access to maximize public access and recreational opportunities while avoiding significant adverse effects on wildlife.”

In many locations around the Bay, the shoreline edge is a vital area for wildlife. Access to some wildlife areas allows visitors to discover, experience and appreciate the Bay’s natural resources and can foster public support for Bay resource protection. However, in some cases, public access may have adverse effects on wildlife (including flushing, increased stress, interrupted foraging, and/or nest abandonment), and may result in adverse long-term population and species effects. The type and severity of effects, if any, on wildlife depend on many factors, including site planning, the type and number of species present and the intensity and nature of the human activity. Potential adverse effects on wildlife may be avoided or minimized by siting, designing and managing public access. The Commission’s advisory document, *Shoreline Spaces: Public Access Design Guidelines for the San Francisco Bay*, cites several strategies to reduce or prevent adverse human and wildlife interactions including: using design elements such as paving materials and site amenities to encourage or discourage specific types of human activities; using durable materials to reduce erosion and to keep users from creating alternate access routes, using physical design features to buffer wildlife from human use such as bridges, boardwalks, moats, fencing, viewing platform and overlooks, and vegetation; managing the type and location of public use such as restricting specific activities or implementing periodic closures during sensitive periods such as breeding seasons; and incorporating education and interpretive elements.

The consistency determination states that “the SBSPR Project will allow public access to the maximum extent compatible with resource protection and maintenance of research and education programs. Unlimited public access to all parts of the wildlife area may be incompatible with resource protection, public safety, and existing regulations.”

The proposed project includes the upgrade of the existing Bay Trail spur along the Bay front of Pond SF2, and the construction of two viewing platforms and interpretive stations along the trail. The trail follows an existing levee that would be rehabilitated to allow multi-use. The perimeter of Pond SF2 would be revegetated, in part to provide an additional buffer from human disturbance along the trail and the adjacent highway. A post-and-cable fence would be built along the levee to further minimize potential intrusion from the trail into the managed pond area.

Pond SF2 Viewing Platform East is proposed to be located at the eastern edge of Pond SF2, off the levee trail at the edge of the pond. Pond SF2 Viewing Platform South is proposed to be located at the southern edge of Pond SF2, off the levee trail at the edge of the pond. To minimize impacts to the pond, both platforms would be raised four feet above the existing grade of the levee. In addition,

interpretive stations are proposed that would describe the process of developing and maintaining a managed pond and explain the value to wildlife.

The proposed project includes the implementation of a number of applied studies researching the potential impacts of landside public access on birds or other target species within Pond SF2.

The USFWS currently allows pedestrian and bicycle access (but no dogs) on the existing Alviso Slough Trail, including the levees around A16 and A17. The proposed project would continue to allow the same public access around these ponds, but will implement a number of applied studies on the effects of public access on use of islands by nesting birds and reproductive success of nesting birds in Pond A16. Results of those studies will be used to determine whether periodic closures of trail segments to protect wildlife are needed.

In addition, a viewing platform at the southern edge of Pond A16 is proposed and would include an interpretive station. A second interpretive station would be located adjacent to the freshwater marsh area along the eastern edge of Pond A16.

- c. **Parking.** Phase One of the SBSPR Project proposes many new trails and public access features but no new parking facilities. BCDC's Design Review Board expressed concern about the lack of new parking availability in that it may prevent the public from accessing the site. The consistency determination responded by stating that parking is currently available "near the Alviso salt ponds complex through the Wildlife Refuge at the Environmental Education Center, the Alviso Marina County Park (immediately adjacent to the complex), Crittenden Lane, and Carl Lane (Sunnyvale Treatment Plant). In addition parking is available near the Ravenswood complex at the north and south side of the Dumbarton Bridge offramp (to Ravenswood trail and unnamed trail at Pond SF2)."

The Commission should determine whether the proposed project is consistent with the Bay Plan policies regarding public access.

5. Natural Resources Policies

- a. **Tidal Marshes and Tidal Flats.** The Bay Plan policies on tidal marshes and tidal flats state, "where and whenever possible, former tidal marshes and tidal flats that have been diked from the Bay should be restored to tidal action in order to replace lost historic wetlands or should be managed to provide important Bay habitat functions...." The policies also state, "[a]ny tidal restoration project should include clear and specific long-term and short-term biological and physical goals, and success criteria and a monitoring program to assess the sustainability of the project. Design and evaluation of the project should include an analysis of: (a) the effects of sea level rise; (b) the impact of the project on the Bay's sediment budget; (c) localized sediment erosion and accretion; (d) the role of tidal flows; (e) potential invasive species introduction, spread and their control; (f) rates of colonization by vegetation, where applicable; (g) expected use of the site by fish, other aquatic organisms and wildlife; and (h) site characterization. If success criteria are not met, corrective measures should be taken...." The policies further state that "[b]ased on scientific ecological analysis and consulta-

tion with the relevant federal and state resource agencies, a minor amount of fill may be authorized to enhance or restore fish, other aquatic organisms or wildlife habitat....”

In the process of restoring tidal action and hydraulic connectivity to the ponds in Phase One, approximately 49,134 cubic yards of material over 115,870 square feet (2.66 acres) of fringe tidal marsh would be impacted by dredging and excavation to construct pilot channels and levee breaches. There is the potential for the scouring of adjacent tidal marshes, sloughs and channels and the erosion of nearby tidal flats as tidal action is restored to the ponds in the Phase One project area. These impacts would potentially occur when levees are breached. If there is inadequate suspended sediment supply available to feed the accreting wetland areas, then the increased sediment may be eroded from nearby tidal flats by the increased tidal prism and altered hydrologic patterns in the area and pulled into the new wetland areas.

- b. **Subtidal Areas.** The Bay Plan policies on subtidal areas state that, “[s]ubtidal restoration projects should be designed to: (a) promote an abundance and diversity of fish, other aquatic organisms and wildlife; (b) restore rare subtidal areas; (c) establish linkages between deep and shallow water and tidal and subtidal habitat in an effort to maximize habitat values for fish, other aquatic organisms and wildlife; or (d) expand water open areas in an effort to make the Bay larger....” The Bay Plan policies on subtidal areas also state that subtidal restoration projects should be monitored for the same components that are required in the tidal marsh and tidal flats policy described above.
- c. **Fish, Other Aquatic Organisms and Wildlife.** The Bay Plan policies on Fish, Other Aquatic Organisms and Wildlife state: “[T]o assure the benefits of fish, other aquatic organisms and wildlife for future generations...the Bay’s tidal marshes, tidal flats, and subtidal habitat should be conserved, restored, and increased.” These policies also state that “[t]he Commission should consult with the California Department of Fish and Game and the U.S. Fish and Wildlife Service or the National Marine Fisheries Service whenever a proposed project may adversely affect an endangered or threatened plant, fish, other aquatic organism or wildlife species...(and) give appropriate consideration of (their) recommendations in order to avoid possible adverse impacts of a proposed project on fish, other aquatic organisms and wildlife habitat.” The policies further state that “[t]he Commission may permit a minor amount of fill or dredging in wildlife refuges, shown on the Plan Maps, necessary to enhance fish, other aquatic organisms and wildlife habitat or to provide public facilities for wildlife observation, interpretation, and education.”

Historically, the salt ponds in all three of the SBSPR Project complexes were comprised of tidal marsh and marsh ecotone habitats. Commercial salt production at the site began as early as the mid-1800s and continued into the 1990’s. Existing salt pond levees currently prevent floodwaters and tides from the Bay from entering the site. The proposed project would involve the restoration of approximately 3,069 acres of former salt ponds to a mosaic of tidal habitat and managed ponds which would provide habitat for a broad range of migratory shorebirds and waterfowl, marsh-dependent birds, mammals, fish and other

aquatic organisms, including special-status species such as the California clapper rail and the salt marsh harvest mouse. The restoration would also establish connectivity among habitats within and adjacent to the project site, which would allow for the movement of wildlife between habitat types.

The Corps has completed Section 7 consultation with the U.S. Fish and Wildlife Service (USFWS) for the entire SBSPR Project. A programmatic Biological Opinion that assesses potential impacts of the entire project and of Phase One actions, was completed in August of 2008. The USFWS opinion on the effects of the proposed action on the endangered salt marsh harvest mouse (*Reithrodontomys raviventris*) (harvest mouse), endangered California clapper rail (*Rallus longirostris obsoletus*) (clapper rail), threatened western snowy plover (*Charadrius alexandrinus nivosus*) (plover), the endangered California least tern (*Sternula antillarum browni*) (tern), and the threatened California brown pelican (*Pelecanus occidentalis californicus*) is that the proposed project is not likely to adversely affect any of these species. Furthermore, the Biological Opinion found that the creation of tidal wetlands and managed ponds would greatly increase the amount of habitat that supports these species.

The EIS/R found that there is potential for significant impacts to species of birds that currently use the salt ponds. If Alternative B was implemented, which would restore the salt ponds to a 50:50 ratio of tidal habitat to managed pond habitat, foraging habitat for ruddy ducks could be lost. However, given that Phase One aims to introduce gradual restoration of the SBSPR Project ponds area that would result in approximately 2,450 acres of tidal habitat (16% of the ponds) and 709 acres of managed ponds (5% of the ponds), this is not an immediate issue of concern for Phase One actions.

The EIS/R identified potential impacts to estuarine fish including the federally listed threatened steelhead. The proposed project is expected to have a net benefit to steelhead by increasing estuarine habitat. However, the EIS/R states that it is possible that steelhead and other fish could enter managed ponds and become trapped. The proposed project requires a Biological Opinion from the National Marine Fisheries Service (NMFS). The Biological Opinion from NMFS is expected in September 2008. In addition, the applicant's proposed monitoring program includes sampling of pelagic and demersal fish in Ponds A6 and SF2.

The Commission should determine whether the project is consistent with its laws and policies regarding natural resources.

6. **Water Quality Policies.** The Bay Plan policies on water quality state that "[B]ay water pollution should be prevented to the greatest extent feasible. The Bay's tidal marshes, tidal flats, and water surface area and volume should be conserved and, whenever possible, restored and increased to protect and improve water quality." The policies also state that "[w]ater quality in all parts of the Bay should be maintained at a level that will support and promote the beneficial uses of the Bay as identified in the San Francisco Bay Regional Water Quality Control Board's (RWQCB) Basin Plan and should be protected from all harmful or potentially harmful pollutants." The policies, recommendations, decisions, advice, and authority of the State Water Resources Control Board and the Regional Board should be the basis for carrying out the Commission's

water quality responsibilities.” Finally, the policies also state that “[n]ew projects should be sited, designed, constructed, and maintained to prevent or, if prevention is infeasible, to minimize the discharge of pollutants into the Bay by: (a) controlling pollutant sources at the project site; (b) using construction materials that contain nonpolluting materials; and (c) applying appropriate, accepted, and effective best management practices; especially where water dispersion is poor and near shellfish beds and other significant biotic resources.”

There is a potential that the proposed project could affect water quality throughout the SBSPR Project area. Breaching levees to restore tidal action to diked salt ponds or increasing circulation into managed ponds can cause adverse changes in turbidity, aquatic habitat sedimentation, or exposure to toxic substances and other contaminants.

Potential impacts to water quality from methylmercury may result from project implementation. An analysis of this issue is discussed in the following section entitled “Methylmercury”.

The consistency determination states that “All managed ponds will comply with water quality discharge requirements and objectives set by the RWQCB. In addition, best management practices (BMPs) identified in the Storm Water Pollution Prevention Plan to be prepared by the project sponsors and the Biological Opinion will be employed to limit turbidity and sediment transport. Construction activities may cause temporary water quality impairment because of discharges to nearby water and/or drainage channels. “ Best management techniques to be used include floating sediment curtains; the construction of temporary containment berms, baffles, and hay bales; and hydroseeding disturbed slopes with native vegetation. All of these actions are designed to limit erosion and sediment release and keep effects localized. It should also be noted that the consistency determination states that most of the construction will occur inside the ponds prior to being breached and away from the breach locations to prevent releases to adjacent sloughs or creeks.

The consistency determination further states that “Short-term channel incision would likely result in increased sediment suspension and water turbidity downstream of areas where erosion is taking place. However, appropriate site-specific design should ensure that this effect would be comparatively minor and that it would decrease and disappear as the system equilibrates as part of habitat restoration.”

The project sponsors have obtained authorization from the RWQCB under waste discharge requirements to construct proposed elements of the SBSPR Project. The project sponsors would prepare a storm water pollution prevention plan (SWPPP) and require all construction contractors to implement all BMPs identified in the SWPPP for controlling soil erosion and discharges of other construction-related contaminants.

- a. **Salinity.** The consistency determination states that Phase One actions are designed to ensure that discharged salinity levels comply with the RWQCB’s water quality standards. Salinity levels would be monitored in Ponds A5, A7, A8, A8S, A16 and SF2 and, if triggers are exceeded in the Adaptive Management Plan, then actions would be implemented to avoid significant impacts.
- b. **Dissolved Oxygen.** The USFWS has experienced difficulty in the past in maintaining adequate dissolved oxygen levels at pond discharge points, particularly in the Alviso complex. There have been three reported occasions in the past four years

where severe depletion in dissolved oxygen levels has led to gulls feeding on oxygen stressed fish or conditions where low dissolved oxygen levels caused fish mortality. The proposed project actions have been designed to minimize high risk factors for low dissolved oxygen. Design elements, including hydraulic residence time, water depth, and mixing would be optimized to maintain dissolved oxygen levels that meet the RWQCB's Basin Plan Water Quality Objectives. Dissolved oxygen levels would be monitored in Ponds A5, A7, A8, A8S, A16, and SF2 and, if triggers are exceeded in the Adaptive Management Plan, then actions would be implemented to avoid significant impacts.

- c. **Mercury.** Sediments in some of the ponds throughout the SBSPR Project area contain high levels of mercury contamination. The Alviso complex ponds are an area of special concern given that the historic New Almaden mercury mine released significant quantities of mercury into Guadalupe Slough that accumulated in the Alviso ponds. The remobilization of mercury-contaminated sediments into the water column, either directly (e.g., during excavation of pilot channels) or indirectly (through increased sediment scour after a pond is opened to tidal action), can cause increased mercury concentrations in the water column and sediment in the Bay and have impacts on water quality, and fish and wildlife. In 2006, the RWQCB approved a total maximum daily load (TMDL) plan for mercury in San Francisco Bay which specifies that mercury levels cannot exceed 0.2 part per million (ppm) in large fish and 0.03 ppm in small fish. The Bay mercury TMDL also requires that activities avoid release of sediments into the Bay that have a median mercury concentration greater than 0.2 ppm, and that existing water quality objectives (0.025 – 0.050 µg/L) for mercury be attained.

The consistency determination also states that “to help ensure that these objectives are met, testing of sediments for mercury concentrations has been conducted within ponds to be opened to tidal action, and within sloughs and marshes that may scour following breaching of a pond. As a result of the preliminary testing, a mercury study is currently underway to ensure that impacts on biota are minimized during the restoration process. This mercury study focuses on the Alviso area where mercury levels are known to be high, but also includes sampling sites elsewhere in the South Bay. This study is measuring mercury levels in the sediment, water column, and various sentinel species; measuring the bioavailability of inorganic mercury in sediments; measuring mercury methylation across salinity gradients in managed ponds, marshes, and other habitat types. This study will increase the understanding of mercury cycling within the Project area and will inform management decisions to further minimize mercury exposure.”

As tidal habitat is restored in some of the ponds, there is a potential for increased methylmercury (MeHg) production. MeHg is a particular toxic form of mercury which is more bioavailable to fish and wildlife and therefore can have more adverse effects on them. Pond A8 is of special concern since it contains a significant amount of mercury-laden sediment. The consistency determination states that “restoration of tidal action at Pond A8 is designed to be reversible so that in the event that unacceptable ecological impacts begin to occur, tidal exchange to Pond A8 can be eliminated to prevent long-term adverse impacts.”

On August 13, 2008, RWQCB issued a waste discharge requirements and water quality certification authorizing Phase One activities for the South Bay Salt Ponds Restoration Project. The order requires the applicant to have all discharge waters comply with the water quality objectives set by the Basin Plan; monitor all of the parameters that were proposed in the habitat mitigation and monitoring plan, as discussed in the section entitled, "Monitoring/Adaptive Management"; and comply with the limits set by the mercury TMDL for mercury concentrations.

The Commission should determine whether the proposed project is consistent with its policies on water quality.

7. **Dredging.** As part of the proposed project, sediment would be dredged both from the Commission's Bay and Salt Pond jurisdictions to: (1) breach levees; (2) create pilot channels, internal channels and habitat islands; (3) create borrow pits; and (4) lower internal levees. The project description describes placement of the dredged material in the following areas: (1) in the proposed restored tidal areas of the salt ponds; (2) on levee tops; (3) within ponds for nesting islands; (4) in historic borrow areas; (5) in ponds to create low berms to guide channel and pond development; and (6) in dredge cuts to create ditch blocks.

Bay Plan policies on dredging state in part, that "[d]redging and dredged material disposal should be conducted in an environmentally and economically sound manner. Dredgers should reduce disposal in the Bay and certain waterways over time..." According to Dredging Policy Two, the Commission should authorize dredging when it can find that (a) it serves a water-oriented use or other important public purpose; (b) the materials to be dredged meet the water quality requirements of the San Francisco Bay Regional Water Quality Control Board; (c) important fisheries and Bay natural resources would be protected through seasonal restrictions; (d) the project will result in the minimum dredging volume necessary; and (e) the materials would be disposed of in accordance with Policy 3." Dredging Policy Three states in part, that dredged materials should, if feasible, be reused or disposed outside the Bay and certain waterways. Except when reused in an approved fill project, dredged material should not be disposed in the Bay...."

The dredged sediment for this project is proposed for reuse in site management and habitat features. No dredged material is proposed for disposal within the Commission's Bay jurisdiction, so therefore, this project meets the overall LTMS goals (Long Term Management Strategy for the Placement of Dredged Material in the San Francisco Bay Region) of reusing dredged material when feasible in restoration and construction activities. The proposed project as described is a water oriented use as it would restore tidal action to the project site, and increase overall tidal habitats of the Bay increasing resident, migrant and endangered species habitat, an important public purpose.

The RWQCB has issued a Waste Discharge Requirement for the project, which requires that the project sponsor utilize the Dredged Material Management Office process for testing the dredged sediments prior to any dredging activities. The RWQCB, in meeting its Clean Water Act and Porter Cologne Act requirements cannot authorize placement of contaminated sediments on site. Finally, this project proposes to dredge sediment only to provide access to the tidal water of the Bay, and improve habitat function and management of the site for wildlife.

The Bay Plan salt pond policies state, in part, that any restoration, enhancement or conversion of salt ponds to subtidal or wetland habitat should include an analysis of “[p]otential fill activities, including the use of fill material such as sediments dredged from the Bay and rock, to assist restoration objectives....” The material dredged will be used on site to assist in meeting restoration objectives. In addition, monitoring and adaptive management are key features in the proposed project with specific criteria and goals that will trigger decisions as additional phases of the project are developed.

8. **Sea Level Rise/Safety of Fills.** The Bay Plan policies on Safety of Fills state in part that, “[t]o prevent damage from flooding, structures on fill or near the shoreline should have adequate flood protection including consideration of future relative sea level rise as determined by competent engineers.” Additionally, these policies state in part that, “[t]o minimize the potential hazard to Bay fill projects and bayside development from subsidence, all proposed development should be sufficiently high above the highest estimated tide level for the expected life of the project or sufficiently protected by levees...” These policies further state in part that, “[l]ocal governments and special districts with responsibilities for flood protection should assure that their requirements and criteria reflect future relative sea level rise and should assure that new structures and uses attracting people are not approved in flood prone areas or in areas that will become flood prone in the future, and that structures and uses that are approvable will be built at stable elevations should assure long-term protection from flood hazards.” Finally, the Bay Plan Salt Pond Policy 3.c. states in part that “[a]ny project for the restoration, enhancement or conversion of salt ponds to subtidal or wetland habitat should...[be]...[d]esign[ed] and evaluat[ed]...[based partly on]...an analysis of [f]lood management measures.”

The consistency determination states that the proposed project generally utilized a mid-range sea level rise estimate for analysis. The Final EIS/R for the proposed project used the 2001 Intergovernmental Panel on Climate Change (IPCC) mid-range sea level rise estimate of 6 inches by 2050 (3 mm/yr average) and 18 inches by 2100 (6 mm/yr average between 2050 and 2100) (IPCC 2001). The higher rates in the second half of the century reflect the effects of accelerated sea level rise.

Further, the consistency determination states that local subsidence historically occurred due to groundwater withdrawals, but that a reduced rate of groundwater withdrawals coupled with the recharge of aquifers, has resulted in decreased subsidence. According to the consistency determination, “[r]ecent estimates of vertical land movements in the Santa Clara Valley (Schmidt and Burgmann 2003) show that only small amounts of subsidence are likely to be occurring in the South Bay that are due to groundwater extraction. In this analysis it is assumed that no land movement due to groundwater withdrawal takes place.”

The USFWS plans to further consider sea level rise during the detailed design for each subsequent phase of project implementation, including flood protection levees. According to the consistency determination, “[t]he plans would outline a strategy for low-, mid-, and high-end sea level rise predictions. For example, the plan may include building a levee to accommodate the 50-year mid-range sea level rise projection, and incorporate features or outline a process to deal with higher or lower rates of sea level rise.... Higher than anticipated sea level rise would require subsequent design phases to raise the levee (i.e., widening and raising the levee or building a flood wall) before sea

level rises above the design level for flood protection. Other options would include overbuilding the levee initially to anticipate a higher rate of sea level rise, either by building a higher levee, or by building a levee with a wider base to more easily accommodate future increases in levee height. The future design of the flood protection levee would balance the cost and benefits of the potential approaches at the time of design. The project-level analysis and design would be presented in a future project-level EIS/R. Subsequent phases of environmental documentation may also be required to address changes to the Project based on updated sea level rise information and analysis. For example, there may be a need to import more fill than currently anticipated in this programmatic EIS/R for flood protection levee construction and maintenance of the flood protection and managed pond levees.” (Source: <http://www.southbayrestoration.org/climate/>)

Most of the public access proposed as part of the project involves trails and observation areas on the top of, or immediately adjacent to, levees. Some of these trails, particularly those that will be part of the Bay Trail spine, will be on levees that protect inland developed areas from flooding. The U.S. Army Corps of Engineers is currently studying flood protection in the South Bay to determine suitable strategies for protecting developed areas from flooding, but it is likely that some or all of the levees bordering development will be raised. The public access on top of raised levees will thus be high enough not to be flooded by anticipated sea level rise. However, depending on the adaptive management strategies developed as the restoration of the salt ponds proceeds, some of the spur trails that run on top of ponds that will be managed to provide a variety of pond habitats, may be lost if it determined that some of these ponds will be restored to tidal action, or that it will be too expensive to maintain these levees. All of the built structures, such as observation decks, restrooms, interpretive panels, etc. would either be constructed at elevations sufficient to accommodate expected sea level rise, or would be able to be readily removed and relocated.

The Commission should determine whether the proposed project is consistent with the policies on safety of fills, particularly whether the public access areas would be affected by rising sea levels.

B. Review Boards

1. **Engineering Criteria Review Board.** The Commission’s Engineering Criteria Review Board (ECRB) will not review the proposed project.
2. **Design Review Board.** The Design Review Board (DRB) initially reviewed this project at its December 10, 2007 meeting in East Palo Alto, following a site visit to the Ravenswood SF2 pond. The DRB focused on four aspects of the public access design: (1) ensuring that elevations of the public access areas were designed appropriately, relative to future sea level rise; (2) adequate parking availability; (3) “access to the access”, i.e., ensuring that the public is aware of the project and the new public access areas; and (4) designing the proposed dead end trails to attract more public usage.

The applicant responded that: (a) viewing platforms would be constructed well above anticipated sea level rise, trails would be built on levees which will have to be raised to protect inland areas from flooding as sea level rise occurs, and many public access platforms and levee trails would be around managed ponds with controlled water levels; (b) key public access areas are accessible by car, bike and foot and parking already

exists at all proposed public access areas; (c) the project managers will use different approaches to raise public awareness (billboards, web cams, websites, encouraging school groups to use the refuge, etc.); and (d) wildlife viewing areas would be situated at the ends of the two terminal trails planned for Phase One to provide a “reward” for the public to go to the end.

The DRB reviewed this project a second time at its April 8, 2008 meeting in San Francisco, and recommended that the applicant review BCDC’s shoreline signage guidelines for design direction for the billboard. The DRB also requested that a future review focus on a comprehensive sign program that includes interpretive, way-finding, etc. and that in advertising the project, the applicant should include a whole network of communication techniques, including technology and/or photography.

- C. **Environmental Review.** On March 11, 2008, the California Department of Fish and Game, acting as lead agency under the California Environmental Quality Act, certified the Draft Environmental Impact Statement/Environmental Impact Report, jointly prepared on behalf of the California Department of Fish and Game and the U.S. Fish and Wildlife Service for the entire South Bay Salt Ponds Project. A summary of the Final EIS/R is attached as Exhibit K. Additionally, the U.S. Fish and Wildlife Service completed a biological opinion in August 2008 as part of its Section 7 consultation to the Corps.

D. **Relevant Portions of the McAteer-Petris Act**

1. Section 66602.1
2. Section 66605
3. Section 66632

E. **Relevant Portions of the San Francisco Bay Plan**

3. *San Francisco Bay Plan* Policies on Fish, Other Aquatic Organisms, and Wildlife (page 15)
4. *San Francisco Bay Plan* Policies on Water Quality (page 17)
5. *San Francisco Bay Plan* Policies on Water Surface Area and Volume (page 20)
6. *San Francisco Bay Plan* Policies on Tidal Marshes and Tidal Flats (page 21)
7. *San Francisco Bay Plan* Policies on Subtidal Areas (page 26)
8. *San Francisco Bay Plan* Policies on Public Access (page 57)
9. *San Francisco Bay Plan* Policies on Salt Ponds (page 64)
10. *San Francisco Bay Plan* Policies on Safety of Fills (page 31)

Exhibits

- A. **South Bay Salt Ponds Restoration Project Map**
- B. **Pond A6 Restoration Plan**
- C. **Ponds A8, A8S, A7, A5 Restoration Plan**
- D. **Pond A16 Restoration Plan**
- E. **Pond A16 Access and Parking Plan**
- F. **Pond A16 Public Access Plan**

- G. **Pond SF2 Restoration Plan**
- H. **Pond SF2 Access and Parking Plan**
- I. **Pond SF2 Public Access Plan**
- J. **Pond A3 Access and Parking Plan**
- K. **Environmental Document Summary**